

# Work Order ID 86364

June-27-12 3:46:39 PM

**\*86364\***

Page 1

Item ID: D4154-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Plate

Stop **\*NS2\***

Start Date: 27/06/2012 Start Qty: 12.00

**\*12\***

Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 12.00

**\*12\***

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/06/28

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4154	D

100	0.00
-----	------

**\*100\***

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg

Dwg Rev: 8

Prog Rev: 8

304.050

2-Deburr if necessary

110	QC2- Inspect parts off machine FAI/FAIB	0.00
-----	---	------

**\*110\***

QC

Memo

0.00

Quality Control

12 0 Jm 12-6-29

12 0 Jm 12-6-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 86364

\*86.364\*

Page 2

June-27-12 3:46:39 PM

Item ID: D4154-1

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Plate

Stop

\*NS2\*

Start Date: 27/06/2012 Start Qty: 12.00

\*12\*

Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 12.00

\*12\*

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

120

QC8- Inspect parts - second check

0.00

\*120\*

QC

Memo

0.00

Quality Control

130

Form as per dwg

0.00

\*130\*

Brake NC

Memo

0.00

Brake NC

140

QC5- Inspect part completeness to step on W/O

0.00

\*140\*

QC

Memo

0.00

Quality Control

SB  
12/07/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 86364

June-27-12 3:46:39 PM

**\*86364\***

Page 3

Item ID: D4154-1

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Plate

Stop **\*NS2\***

Start Date: 27/06/2012 Start Qty: 12.00

**\*12\***

Cust Item ID:

Required Date: 11/07/2012 Req'd Qty: 12.00

**\*12\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

150

Identify as per dwg & Stock Location: W/E

0.00

**\*150\***

Packaging

Memo

0.00

Packaging

(x12) ME 12-07-03

160

QC21- Final Inspection - Work Order Release

0.00

**\*160\***

QC

Memo

0.00

Quality Control

12/7/4 ME 12-07-03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

June-27-12 3:46:43 PM

Page 1

Work Order ID: 86364

\*86364\*

Parent Item: D4154-1

\*D4154-1\*

Parent Item Name: Plate

Start Date: 27/06/2012

Required Date: 11/07/2012

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP Rev:A 10.08.03 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304S18GA		Purchased	No			100	sf	95.8149	4.2697	53.93305			
-----------	--	-----------	----	--	--	-----	----	---------	--------	----------	--	--	--

\*M304S18GA\*

304/316 .050 Sheet

\*\*

Sm 12-6-29

Location

Loc Qty

Loc Code

MAT020

95.814947

120604

8.66421

121626

2.65

121660

84.500737

121660

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

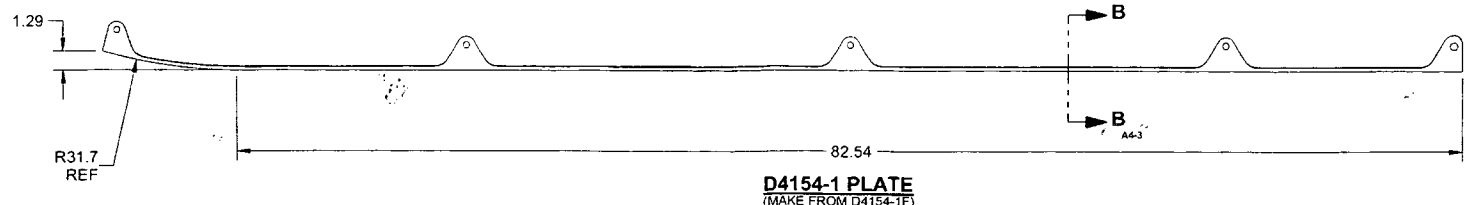
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

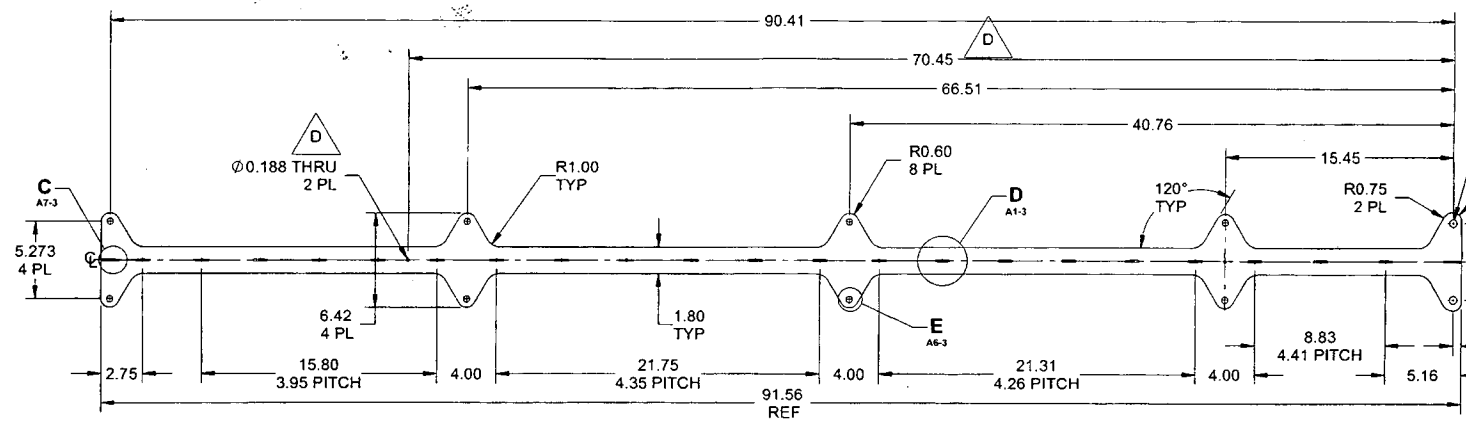


2.248

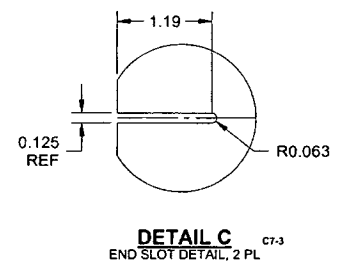
26364



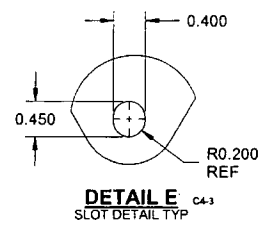
**D4154-1 PLATE**  
(MAKE FROM D4154-1F)



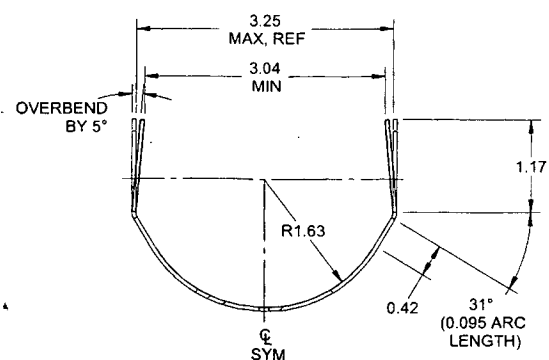
**D4154-1F FLAT PATTERN**



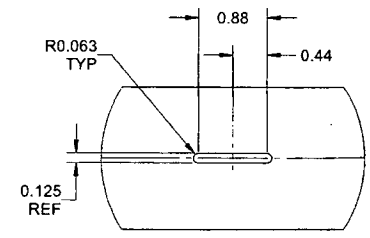
**DETAIL C**  
END SLOT DETAIL, 2 PL C7-3



**DETAIL E**  
SLOT DETAIL TYP C4-3



**SECTION B-B** D3-3



**DETAIL D**  
SLOT DETAIL TYP C4-3

- NOTES:**
- 1) MATERIAL : AISI 304/316 STAINLESS STEEL PER AMS 5513 OR 5524 OR ASTM A240 OR ASME SA240  
18 GAUGE 0.050 THICK, (REF. DART SPEC. M304S18GA)
  - 2) FINISH : NONE
  - 3) TOLERANCES : PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS : INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES : 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION : NONE
  - 7) WEIGHT : 2.95-lbs

DESIGN	SC	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		<b>D4154</b>	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		<b>WEARPLATE ASSEMBLY</b>	NTS
DATE	12.05.03	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4154-041	WEARPLATE ASSEMBLY
2	1	D4154-1	PLATE
3	1	D4155-1	BAR
4	A/R	2059B	HARDCOAT, (SEE NOTE 9, SHT 2)
5	A/R	4714	(SEE NOTE 11, SHT 2)

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 86364 MLJ  
12/06/28

**RELEASED**  
2012-05-09  
*MD*

**D4154-041 WEARPLATE ASSEMBLY**

D	70.45 WAS 74.45 & Ø0.188 HOLES NOW 2 PL (ZN C4-3 & C7-3)	RF	12.05.03
C	REVISE NOTE 9 (ZN A8-2); ADD HARDCOAT (ZN B7-2); ADD DETAIL A (ZN C2-2)	RF	12.02.21
B	ITEM 4 WAS PR1422 (D3-1); REMOVED FINISH TO NOTE 2 (A8-2); REMOVED SECTION A-A (NO LONGER REQUIRED); REVISED D4154-1F	MB	11.04.05
A	NEW ISSUE	SC	10.07.22
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	<b>DART AEROSPACE USA, INC.</b> KENT, WA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. D
MFG. APPR.	<i>[Signature]</i>	D4154	SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	WEARPLATE ASSEMBLY	NTS
DATE	12.05.03	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

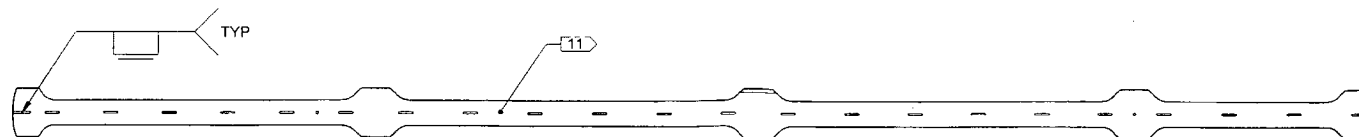
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

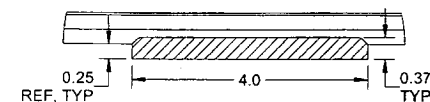
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

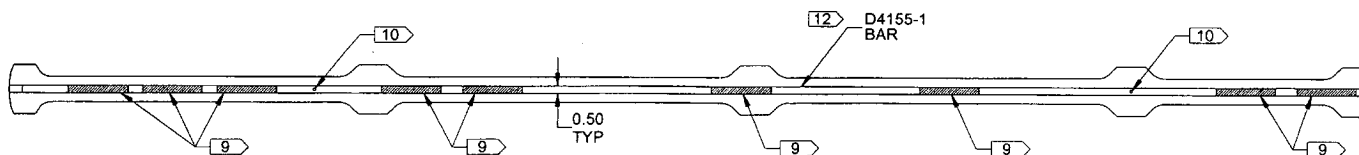
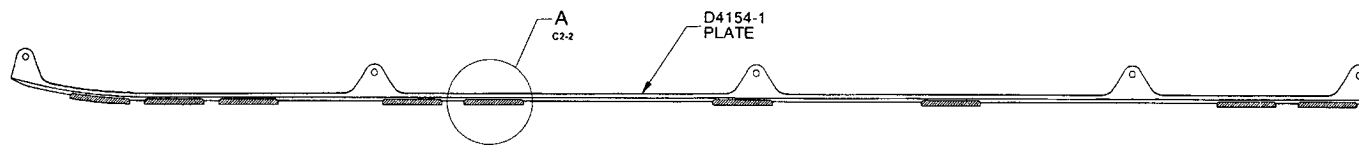
**NOTE:** Date & initial all entries



86364



**DETAIL A** C5-2  
TYP



**D4154-041 WEARPLATE ASSEMBLY**

**RELEASED**  
2012-05-09  
MD

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 6.88 lbs
- 8) WELDING: PER QSI 004
- 9) 2059B HARDCOAT WELD, 0.37 THICK x 0.50 WIDE, FLUSH WITH D4155-1 BAR ON LATERAL SURFACES, 9 PL
- 10) TRANSFER DRILL  $\phi 0.188$  HOLES FROM D4154-1 PLATE TO D4155-1 BAR
- 11) COAT ENTIRE TOP (CONCAVE) SURFACE WITH A LAYER OF PLUS ONE ROCKGUARD 4714, 0.020-0.040 THICK
- 12) FORM TO MATCH PROFILE OF D4154-1 AT TIME OF WELDING

DESIGN	SC	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	KENT, WA	
CHECKED	RF	DRAWING NO.	REV. D
MFG. APPR.	RF	<b>D4154</b>	SHEET 2 OF 3
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	<b>WEARPLATE ASSEMBLY</b>	NTS
DATE	12.05.03	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> - 86364
<b>Description:</b> Plate		<b>Part Number:</b> D4154-1
<b>Inspection Dwg:</b> D4154	<b>Rev:</b> <i>[Signature]</i>	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.400 ✓	+/-0.010	0.398"	✓		✓	mm01
0.450 ✓	+/-0.010	0.454"	✓		✓	"
0.125 ✓	+/-0.010	0.124"	✓		✓	"
0.88 ✓	+/-0.030	0.878"	✓		✓	"
1.19 ✓	+/-0.030	1.178"	✓		✓	"
5.273 ✓	+/-0.010	5.269"	✓		✓	"
2.75 ✓	+/-0.030	2.62.751	✓		✓	"
15.80 ✓	+/-0.030	15.80"	✓		MT	MM01
3.95 ✓	+/-0.030	3.952"	✓		✓	mm01
4.00 ✓	+/-0.030	4.005"	✓		✓	"
6.42 ✓	+/-0.030	6.429"	✓		✓	"
21.75 ✓	+/-0.030	21.75"	✓		MT	MM01
4.35 ✓	+/-0.030	4.351"	✓		✓	mm01
1.80 ✓	+/-0.030	1.817"	✓		✓	"
21.31 ✓	+/-0.030	21.31"	✓		MT	MM01
4.26 ✓	+/-0.030	4.266"	✓		✓	mm01
8.83 ✓	+/-0.030	8.836"	✓		✓	Produced
5.16 ✓	+/-0.030	5.167"	✓		✓	mm01
0.55 ✓	+/-0.030	0.551"	✓		✓	"
91.56 ✓	+/-0.030	91.56"	✓		MT	MM01
90.41 ✓	+/-0.030	90.41"	✓		MT	"
70.45 ✓	+/-0.030	70.45"	✓		MT	"
66.51 ✓	+/-0.030	66.51"	✓		MT	"
<del>48.59</del>	+/-0.030					
40.76 ✓	+/-0.030	40.76"	✓		MT	MM01
15.45 ✓	+/-0.030	15.45"	✓		MT	"
5.223 ✓	+/-0.010	5.221"	✓		✓	mm01
Ø0.516 ✓	+0.008/-0.001	0.517"	✓		✓	"
Ø0.188 ✓	+0.005/-0.001	0.189"	✓		✓	"
0.050 ✓	+/-0.010	0.098"	✓		✓	"

<b>Measured by:</b> <i>Jm</i>	<b>Audited by:</b> <i>[Signature]</i>	<b>Preliminary Approval:</b>
<b>Date:</b> 12-6-29	<b>Date:</b> 12/6/29	<b>Date:</b>

Rev	Date	Change	Revised by	Approved
A	10.09.23	New Issue	KJ	
B	11.04.28	Dimensions updated per Dwg Rev B	KJ	
C	12.05.24	Dimensions updated per Dwg Rev C	KJ	<i>[Signature]</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No- DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries